

*Edgar T. Knight*

DEATHS OF ATHLETES  
AND FATALITIES IN  
ATHLETIC GAMES DURING  
THE YEAR.

BY

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BROOKLYN, N.Y.

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## DEATHS OF ATHLETES AND FATALITIES IN ATHLETIC GAMES DURING THE YEAR.\*

By ROBERT E. COUGHLIN, M.D.,

BROOKLYN, N. Y.

LATE in the year 1904 the writer determined to collect the statistics relating to the deaths of athletes and the fatalities in athletic games during the year 1905, hoping in doing so to decide if possible the susceptibility of athletes to certain diseased conditions, and the most dangerous or fatal games indulged in.

The whole number of deaths collected amounted to one hundred and twenty-eight, of which fifty were due to diseases and seventy-eight to accidents of different kinds. Cerebrospinal meningitis was stated to be the cause of death in nine cases; cardiac disease in eight; pneumonia in seven; pulmonary tuberculosis in seven; Bright's disease in five; appendicitis in four; typhoid fever in four; suicide in two; apoplexy in one; suppurative tonsillitis in one; splenic anemia in one; senility in one.

In the accidental deaths football was the game mentioned in twenty-eight cases; baseball in twelve; horse racing in nine; boxing in six; gymnasium feats in three; auto driving in two; the other fatalities being equally divided between golf playing, hammer throwing, bicycle coasting, handball, polo playing and wrestling. Of the fifty deaths due to

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disease the ages at death were stated in twenty-nine instances, the average age being thirty-one years, the oldest age eighty-seven years, and the youngest eighteen years. In the accidental deaths the ages were stated in thirty-nine cases, the average age at death being twenty years; the oldest age sixty years, and the youngest twelve. The average age at death of the whole number was twenty-six years and one month.

The causes of death in football were stated as follows: Abdominal injuries, seven; dislocation of spine with paralysis, three; concussion of brain, five; fracture of skull, five; cerebral hemorrhage, two; fracture of rib (the same being driven into the heart), two; fracture of spine, one; acute peritonitis, one; convulsions, one; infected wound of knee-joint, one. The causes of death in baseball were stated as follows: Shock (from blow over cardiac area), five; head injuries, four; cardiac failure while running to base, one; blow in abdomen, one; heat exhaustion, one. Fractures of the skull were the causes of death in the nine jockeys. In the swimming accidents exhaustion by being caught in a current was the cause of death in three cases. Cramp caused one death. The causes of death in the remaining two cases could not be determined. In the boxing accidents blood clot in brain was the autopsy report in two cases. Shock from blow over heart was the cause of death in one case. In the other three the cause of death was not determined. In the three gymnasium accidents fracture of the cervical vertebræ was the cause of death in all three cases, one of the victims being a young girl of sixteen years. One individual died from cardiac paralysis while playing handball, another sustained a fracture of the skull while bicycle coasting, another died from a fracture of the skull which was

caused by the blow of a golf stick, while another died from a fractured skull, the result of a false hammer throw.

There were other accidental deaths of athletes having nothing to do with athletics, such as railroad accidents, street fights, etc. One peculiar instance may be related in which a young and very promising athlete came to his death while splitting wood, a piece of the splintered wood being driven into his abdomen with a promptly fatal result.

Cerebrospinal meningitis being the cause of death in nine victims first attracts our attention, but we can very readily pass over this disease as the number of cases mentioned was undoubtedly due to a continuance and more extended prevalence of the disease from the excess of 1904, which, as we know, was an epidemic year for this disease. It would appear to prove, however, the assertion previously made by the writer<sup>1</sup> of this article, that athletes succumb from infectious diseases as readily as others, and that in some instances they appear to be peculiarly susceptible to infectious diseases.

The next disease or condition to be considered in this connection is known as cardiac disease, which, of course, means any of the cardiac diseases which can be differentiated by the careful diagnostician. Eliminating cerebrospinal meningitis for the reasons stated, we have as a great cause of death in athletes cardiac disease. It may be noted that many of the accidental deaths already related had as their chief characteristic a sudden failure of the heart. Pneumonia ranks high as a cause of death in athletes for the same reason, viz., a damaged heart. Although the best authorities agree that athletics have a tendency to impair the heart, only lately we have the opinion from Dr. Anderson of Yale that he has statistics<sup>2</sup> which appear to prove the contrary. Since



the year 1855 there have been fifty-one deaths of Yale athletes out of a total of 761, with heart disease as the cause of death in two. To quote the *Medical Director*: "It is a widespread opinion that athletes are liable to heart trouble, but only two Yale men of this sturdy little army have died from this cause."

President Eliot<sup>3</sup> of Harvard says: "I would say that there are no more fatalities from heart disease among athletes than would be natural in the same number of men anywhere."

The other side of the subject may be reviewed by noting the opinions of different writers who have made athletics more or less a study. Professor James<sup>4</sup> of the Illinois State University declares on the subject that nearly all football players, baseball men, and lawn tennis experts have weak hearts and are more liable to diseases of other forms than men who exercise moderately. Regarding the crack tennis player, he says: "There is scarcely one of the top-notchers but has suffered from heart disease, many of them in severe form. Many have died of heart disease between the ages of forty and forty-five years, when they should have been at their best physically."

Dr. William W. Hitchcock,<sup>5</sup> in an article entitled "The Importance of the Early Recognition of Arterial Changes and of Chronic Vascular Hypertension in Relation to Life Insurance," says: "Athletes with arterial hypertrophy suffer frequently from high tension, with its entailed dangers."

H. B. Anderson<sup>6</sup> in the *British Medical Journal* declares that we need only recall how often it happens that the cardiac muscle is insufficient to withstand the requirements of ordinary quiet life, to understand how powerful a cause of mischief severe exertion may be.

As to the effect of repeated or habitual exertion within wise limits, it is known that athletic and other exercises, when properly regulated, are beneficial to the heart by producing physiological hypertrophy of the organ and lowering the average of peripheral resistance. Clinically speaking, the military surgeons first directed attention to, and carefully investigated the effects of overexertion on the heart. It was found that many cases of cardiac trouble existed in the otherwise healthy soldiers. Aside from certain modifying conditions in soldiers' surroundings, which appear to increase the liability to injury from overstrain, the tendency of overexertion in civil and military life is to produce cardiovascular lesions. Exercises in which the legs are employed are especially likely to be associated with cardiac trouble. These cases of overstrain may be classified as acute and chronic. The former is generally noted in the young, weakly, or untrained, as the result of severe or prolonged exertion. The "irritable" heart is more often the result of repeated or prolonged exertion, or of overexertion developing gradually. Mechanical stress not only injures the myocardium, but it is also a cause of aortic valvular lesions. It may even damage sound valves. In the obese there is a condition of chronic overstrain, for there is a relative disproportion between the size of the heart and the work it has to perform. The size of the heart is proportionate to the size of the skeletal muscles under ordinary circumstances, and the work of the heart is proportionate to the bulk of the body.

Maurice Champeaux<sup>7</sup> declares that it is a fact well established by physiology that the amount of food ingested ought to be in relation to the work done by the body. When the work increases, food ought to be increased in proportion. Training brings about an overworked condition, and the organism

becomes a prey to intoxication. Discord then exists between the necessities and conditions of life. On the other hand, the term adaptation represents the physiological state exactly opposed to that of training. The bodily functions are at a maximum. There is an absolute accord between the necessities and conditions of life. In the army the aim should be toward adaptation and not toward training. It is necessary to work with moderation and with reason. An overworked condition should be avoided, and each organism should be adapted to the exigencies of its particular physiological condition.

Pneumonia and pulmonary tuberculosis rank third as causes of death here detailed. In New York State for the year 1905<sup>8</sup> pneumonia was the chief cause of death (10.4 per cent.), with tuberculosis second and giving 10 per cent. Anderson's schedule of Yale athletes before referred to ranks tuberculosis as the chief cause of death, with pneumonia second on the list. J. W. Fisher of one of our large life insurance companies presents the following causes of death among the insured: Tuberculosis, 13 per cent.; pneumonia, 9 per cent.; casualties, 7 per cent.; kidney disease, 6 per cent.; cardiac disease, 6 per cent.; typhoid fever, 6 per cent.; cancer, 5 per cent.; suicide, 2 per cent.

A comparison of the foregoing statistics would make it appear that athletes die most frequently from cardiac diseases, pneumonia, and tuberculosis.

The one death mentioned at the age of eighty-seven was due to old age. This old athlete was a boxing instructor who was known always to have led the strenuous life in all things as well as athletics, vices included. Of the accidental deaths, the first game to be considered is football. In the statistics herein collected we find that twenty-eight deaths, or 33 1-3 per cent., were due to this popular



game. Of these twenty-eight football players, seventeen were high school players, all immature boys of eighteen years or under. Three were physically fit college men. The others were amateurs. The majority of these fatalities occurred during what is called mass play. A few of the victims had been warned by their medical attendants to refrain from indulging in the game, owing to weak hearts, weak constitutions, etc. Fatalities and serious accidents have become so numerous in football that many opinions in a direction to annihilate the game have been expressed by different men and writers of note. Some of them are as follows: W. C. Redfield<sup>9</sup> believes that football has become more dangerous than war, a percentage of deaths and injuries for 1905 being greater than the number killed in the Japanese navy during the Russian-Japanese war. Dr. S. Weir Mitchell<sup>10</sup> considers football barbarous in the extreme. President Eliot of Harvard declares the evils of football as follows: It causes an unreasonable number of serious injuries and deaths; not one in five of the men that play football several seasons escapes without injury properly called serious, and of the twenty to thirty picked players who play hard throughout a season hardly a man escapes serious injury. The public has been kept in ignorance concerning the number and gravity of these injuries, the prevailing practice being to make light of or conceal the injuries sustained. Many of the serious injuries are of such a nature—sprains, strains, wrenches, dislocations, ruptures of ligaments and muscles, and shocks to the brain—that in all probability they can never be perfectly repaired. In any hard-fought game many of the actions of the players are invisible to the spectators, and even to the referee and umpire; hence much profitable foul play escapes notice. The game offers many opportunities for several

players to combine in violently attacking one player. Regarded as a combat between highly-trained men, the prize ring has great advantages over football, for the rules of the prize ring are more humane than those of football, and they can be and are often enforced. The fight in a prize ring between two men facing each other is perfectly visible, so that there are no secret abominations as in football. Yet prize fighting is illegal.

In an article, "The Physical Aspect of American Football,"<sup>11</sup> Nicols and Smith give their experience as physicians to the football squad of Harvard University during the last football season, extending from September 14 to November 25, 1905. Each player was required to report every injury, no matter how trivial it seemed to him, to the surgeon in charge. The list of the injuries received was 145. The authors came to the following conclusions: (1) The number, severity, and permanence of the injuries which are received in playing football are very much greater than generally is credited or believed. (2) The greater number of the injuries come in the "pile" and not in the open plays, although serious injuries are received in the open. (3) The number of injuries is adherent in the game itself, and is not due especially to close competition, as is shown by the fact that the proportion of injuries received in games and in practice is about the same. (4) A large proportion of the injuries is unavoidable. (5) The proportion of injuries is incomparably greater in football than in any other of the major sports. (6) The game does not develop the best type of men physically, because too great prominence is given to weight without corresponding nervous energy. (7) Constant medical supervision of the game where large numbers of men are engaged is a necessity and not a luxury, although it is a question if a game

requiring the constant attendance of two trained surgeons is played under desirable conditions. (8) The percentage of injury is much too great for any mere sport.

One college has taken such a decided stand against the game of football that two large donations have been made by sympathizers, the donations amounting in the aggregate to \$250,000. The financial aspect of the matter undoubtedly has a great deal to do with the continuance of football among college athletics, for the reason that it pays better than all the other college athletics combined. That the game is brutal and as a rule rather uninteresting to the spectators, except where the loyalty to one side or the other is concerned, there can be no doubt or question.

Twelve deaths from baseball is not a large number when one considers that the game is played seven months in the year, as compared with the short football season, lasting about one month and a half, and that almost all the deaths were purely accidental and not because of some trick or maneuver in the game. Fatal blows over the cardiac area, as well as misdirected abdominal blows are simply accidents more or less unavoidable, where so many indulge in a game. The sport, in other words, cannot be called brutal because of these accidents any more than it could be blamed for one player dropping dead while running to first base, or for the death of another from sunstroke or heat exhaustion.

In the swimming accidents one thing might be pointed out, which is that the heart should be in very good condition before one ventures into the water, for the reason that there is so much resistance to overcome that the circulatory organs are staggered perceptibly unless in very good condition. A person with any kind of a diseased cardiac condition should take a milder form of exercise.



In the six deaths caused by boxing it is interesting to note the small proportion of fatalities due to this sport, and that all the accidents were in young men who did not excel in the art. As a rule they were amateurs with very little ring experience. In this connection it may not be amiss to state that no serious injury or death has occurred in the prize ring among top-notchers in fifteen years' time, the last death being that of one Bowen, who fell, striking his head against a brick wall which was a part of a poorly constructed ring. A first-class boxer always trains faithfully for a bout, and he is as a rule in the best possible condition at such times to receive punishment. He is by nature a rugged specimen of humanity with a naturally strong constitution, else he would never take to or choose such a rough game. These are probably a few of the reasons so few accidents occur in the ring, as well as the privilege a contestant has at any time to discontinue in a contest when he sees that it will injure him to continue further. The average well-contested boxing bout is not considered brutal, yet glove contests are allowed in only three states in the Union. There has never been a law enacted against football in America. Of two evils, the law discriminates against the lesser in this instance.

As a matter of history, football was prohibited in Scotland by James II and James IV, and in England Edward II held out pains and penalties for "hustling over large balls." It was also declared illegal in the time of Henry VIII, and strenuous efforts were made by Elizabethan statesmen to suppress the game, but without success.

*Conclusions.*—First: That athletes are prone to cardiac lesions, whether a simple physiological hypertrophy, a hypertrophy with dilatation, an endocarditis, a white spot on the heart, or myocarditis,

as pointed out by Richardson<sup>13</sup> of London, or the different valvular conditions.

Second: That pneumonia ranks high as a cause of death in athletes because of the cardiac embarrassment in connection with this disease.

Third: That athletes appear to be susceptible to infectious diseases, and when affected with these diseases succumb to them as readily as others.

Fourth: That pulmonary tuberculosis is a cause of death in a large percentage of athletes.

Fifth: That the average age at death of athletes is far below that of the average person in the ordinary walks of life.

Sixth: That the game of football as played in America during the season of 1905 was the cause of an appalling number of serious injuries and fatalities, and that it is very evident that something will have to be done to eliminate the dangerous features in the game, especially mass play.

Seventh: The idea in all kinds of athletics should be to improve and make men, not to maim, cripple, and bury them.

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